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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/785,598	02/16/2001	Thomas Thaler	BCO-001A	4386
7590 Patent Administrator Goodwin Procter LLP Exchange Place 53 State Street Boston, MA 02109			EXAMINER ABELSON, RONALD B	
			ART UNIT 2476	PAPER NUMBER
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

09/785,598

Applicant(s)

THALER ET AL.

Examiner

RONALD ABELSON

Art Unit

2476

Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 July 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 25, 27-37 and 39-44 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 25, 27-37 and 39-44 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 2/16/01 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/C)
- 4) ☐ Interview Summary (PTO-413)
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____
- Paper No(s)/Mail Date _____

Claim Objections

1. Claims 27 and 39 are objected to because of the following informalities: the claims are dependent upon cancelled claim 26 and 38 respectively. Appropriate correction is required.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

3. Claim 27 recites the limitation "tracking" in line 1. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 25-27, 30-33, 37-39, 42, and 43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Aiello (US 6,275,544) in view of Hodge (US 4285064).

Regarding claims 25 and 37, Aiello teaches generating a network-wide time signal using a reference time generator; and distributing the network-wide time signal over the network to the plurality of nodes (fig. 1, 2, master clock, col. 2 lines 54-67) the method characterized by the steps of:

generating, at each respective node, a local synchronization signal as required by a respective application (fig. 2 box 28, local clocks, synchronized to the master clock, col. 2 lines 54-67); and

synchronizing the timing of each node for the respective application using the local synchronization signal (fig. 2 box 28, col. 2 lines 54-67). Note, the Examiner corresponds the applicant's application to the Data Modulation (fig. 2 box 28) of the reference.

Aiello is silent on measuring a signal propagation delay of the network-wide time signal between the reference time generator and each of the plurality of nodes.

Hodge teaches measuring a signal propagation delay of the network-wide time signal between the reference time generator and each of the plurality of nodes (propagation delay, synchronization, principal reference station transmits reference burst to all stations for synchronization of their respective clocks, col. 1 lines 16-27).

Therefore it would have been obvious to one of ordinary skill in the art, to modify the system of Aiello by measuring a signal propagation delay of the network-wide time signal between the reference time generator and each of the plurality of nodes, as shown by Hodge. This modification would benefit the system by adjusting for the propagation delay times to ensure that the clocks are synchronized.

Regarding claim 27, maintaining a network-wide time signal as a network cycle master signal at a designated cycle master node of the plurality of nodes of the network maintaining a local cycle master signal at each respective node of the network; and

determining the signal propagation delay at each respective node from the difference between the respective local cycle master signal and the network (Hodge: propagation delay,

synchronization, principal reference station transmits reference burst to all stations for synchronization of their respective clocks, col. 1 lines 16-27).

Regarding claim 30, the local synchronization signal has an associated frequency (Aiello: local clocks run at multiple of data transmission rate, col. 2 lines 54-67).

Regarding claim 31, phase locking the local synchronization signal to a predetermined cycle value (Aiello: phase-locked loop, col. 4 lines 40-43).

Regarding claim 32, performing delay compensation at each respective node (Aiello: col. 4 lines 20-30, col. 7 lines 36-46).

Regarding claim 33, the delay compensation is performed by adding an extra signal delay to the local synchronization signal (Aiello: col. 4 lines 20-30, col. 7 lines 36-46).

Regarding claims 37, 42, a network including a plurality of nodes and a reference time generator for generating a network-

wide time signal; wherein a designated node of the plurality of nodes is connected to the reference time generator, and has means adapted to distribute the network-wide time signal over the network to the plurality of nodes,

characterized in that each node of the plurality of nodes of the network has means adapted to convert the network-wide time signal to a local synchronization signal as required by a respective application, and has means adapted to synchronize the timing of each node for the respective application using the local synchronization signal (Aiello: fig. 2, col. 2 lines 54-67). See applications in fig. 2 box 22, 28).

Regarding claim 43, each node has means adapted to track signal propagation delay using the network-wide time signal, and has means adapted to convert the network-wide time signal by generating the local synchronization signal using the signal propagation delay of the respective node (Hodge: propagation delay, synchronization, principal reference station transmits reference burst to all stations for synchronization of their respective clocks, col. 1 lines 16-27).

Regarding claim 39, the designated node has means adapted to maintain the network-wide time signal as a network cycle

master signal; and each respective node of the plurality of nodes has means adapted to maintain a local cycle master signal, and has means adapted to determine a respective signal propagation delay at each respective node from the difference between the respective local cycle master signal and the network cycle master signal (Aiello: col. 4 lines 20-30, col. 7 lines 36-46).

6. Claims 28 and 40 rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Aiello and Hodge as applied to claims 27 and 39 above in view of Lovett (US 6,591,370).

The combination is silent on the network cycle master signal and each local cycle master signal is stored in a respective network cycle master register and local cycle master register, at each respective node.

Lovett teaches storing a clock signal in a register (col. 4 line 31 - 33).

Therefore it would have been obvious to one of ordinary skill in the art, to modify the system of the combination by storing the master clock and local clock values in a register, as shown by Lovett. This modification would benefit the system since a register is a proven, reliable method for storing clock

signals.

7. Claim 29 rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Aiello and Hodge as applied to claim 25 above, and further in view of applicant's admitted prior art 'AAPA'.

The combination is silent on a house synchronization signal.

AAPA teaches a house synchronization signal (pg. 1 line 21).

Therefore it would have been obvious to one of ordinary skill in the art, to modify the system of the combination by transmitting a house synchronization signal for the network-wide time signal, as suggested by AAPA. This modification would benefit the system since house synchronization signals guarantee synchronicity of all connected devices (AAPA: pg. 1 line 21).

8. Claims 34, 41, and 44 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Aiello and Hodge as applied to claims 25, 37, and 42 above, and further in view of Domon (US 6,678,781).

The combination is silent on IEEE 1394 compliance.

Domon teaches the benefits of IEEE 1394 compliance (col. 1 lines 14-18).

Therefore it would have been obvious to one of ordinary skill in the art, to modify the system of the combination by making the nodes IEEE 1394 compliant, as suggested by Domon. This modification can be performed according to the teachings of adhering to IEEE 1394 standards. This modification would benefit the system since IEEE 1394 provides for real-time transport of digital video (Domon: col. 1 lines 14-18).

9. Claim 35 rejected under 35 U.S.C. 103(a) as being unpatentable over the combination Aiello and Hodge as applied to claim 25 above, and further in view of Weidemann "Application Critical Parameters for Rubidium Standards".

The combination Aiello is silent on generating the network wide time signal includes the step of utilizing a rubidium reference signal generator.

Weidemann teaches the further recited limitation above at e.g., in the summary on page 87.

Therefore it would have been obvious to one of ordinary skill in the art, to modify the system of the combination by

generating the network wide time signal includes the step of utilizing a rubidium reference signal generator, as shown by Weidemann. This modification can be performed according to the teachings of Weidemann. This modification would benefit the system to provide highly reliable clocking source.

10. Claim 36 rejected under 35 U.S.C. 103(a) as being unpatentable over the combination of Aiello and Hodge as applied to claim 25 above, and further in view of Kim (US 6,370,138).

The combination Aiello is silent on the step of generating the network-wide time signal includes the step of: utilizing a global positioning system (GPS)-based reference signal generator.

Kim teaches the step of generating the network-wide time signal includes the step of: utilizing a global positioning system (GPS)-based reference signal generator (GPS, col. 7 lines 3-23).

Therefore it would have been obvious to one of ordinary skill in the art, to modify the system of the combination by generating the network-wide time signal includes the step of: utilizing a global positioning system (GPS)-based reference signal generator, as shown by Kim. This modification can be performed according to the teachings of Kim. This modification

would benefit the system since GPS is a highly accurate positioning system.

Response to Arguments

11. Applicant's arguments with respect to the amended independent claims have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

12. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated

from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to RONALD ABELSON whose telephone number is (571)272-3165. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ayaz Sheikh can be reached on (571) 272-3795. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Ronald Abelson
Primary Examiner
Art Unit 2476

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